

4.7 MARINE VESSEL TRANSPORTATION

This section describes marine vessel traffic and marine vessel infrastructure locally in the near vicinity of the proposed cable route, as well as regionally within Monterey Bay; which is considered the study area for the marine vessel transportation analysis. Based on information about existing marine vessel infrastructure, existing vessel traffic, the proposed construction corridor, construction activities, and actions during operation, this section identifies potential impacts from the Project and mitigation measures to lessen and avoid impacts on marine vessel transportation.

4.7.1 Environmental Setting

As shown in Figure 2.1-2, the Project construction and operations area would be located within Monterey Bay, in the vicinity of Moss Landing Harbor.

Vessel Infrastructure in Monterey Bay

Moss Landing Harbor has approximately 500 berths, and is used generally by commercial fishing vessels and pleasure craft (NOAA 2002). A deep-draft vessel mooring and fueling facility is located approximately 0.8 mile northwest of the harbor entrance. Moss Landing Harbor includes a federally maintained, 15-foot deep jettied entrance channel, an outer turning basin, an inner channel, and an inner turning basin about 0.8 mile south of the entrance. A private channel leads north from the outer turning basin to a private yacht club basin (NOAA 2002). The harbor has public boat launching facilities for boats up to 60 feet (183 m) long (NOAA 2002). Moss Landing Harbor is administered by the Moss Landing Harbor District.

Monterey Harbor and Santa Cruz Harbor are also in Monterey Bay. Monterey Harbor is owned and operated by the city of Monterey. The harbor can accommodate up to 800 vessels of various types and sizes, and includes two municipal wharves and four public launch ramps (NOAA 2002). Santa Cruz Harbor is a small craft harbor accommodating approximately 1,200 vessels (NOAA 2002).

Hazards and Obstructions to Vessel Traffic in Monterey Bay

The northern portion of Monterey Bay includes a Naval Operating Area. Within this area, naval and submarine exercises are conducted. The proposed cable route crosses the Naval Operating Area. The southern portion of Monterey Bay includes a prohibited area near the firing range at Fort Ord (MBARI 2004). This prohibited area is several miles south of the proposed cable route. Other hazards to vessel operations include a

1 dredge dumpsite, mooring areas off Moss Landing Harbor, and multiple buoys. These
2 various obstructions are outside the proposed cable route.

3 Cables on the seafloor can be considered an obstruction to vessel traffic because often
4 anchoring or trawl fishing is not allowed in the near vicinity. One cable was identified in
5 Monterey Bay south of the proposed cable route, near the Naval Postgraduate School.
6 Surveys and database searches, as well as discussions with the U.S. Navy, found no
7 installed cables, active or retired, along the proposed cable route (MBARI 2004).

8 **Existing Vessel Traffic**

9 Fishing vessels are the most common type of vessel in Monterey Bay, with recreational
10 vessels a close second. Cargo carriers are also present, with tankers being the least
11 common (USCG 2002).

12 *Fishing Vessels*

13 The number of commercial fishing vessels operating in the greater MBNMS area is
14 estimated to be about 1,200 (Starr et al. 2002). Historically, Monterey Bay has been
15 one of California's most important commercial fishing areas (Natural Resources
16 Consultants 2001). However, the number of commercial fishing vessels operating in the
17 Monterey Bay area has declined due to lower annual catch limits for many species.
18 Commercial fishing vessels are expected within the proposed cable route construction
19 and operation areas.

20 *Recreational Vessels*

21 The number of registered motorized recreational vessels in Monterey and Santa Cruz
22 counties in 2003 was 17,800, and is expected to increase (California Department of
23 Motor Vehicles 2004). Outboard motorboats less than 16 feet (4.9 m) long are the most
24 common recreational vessel in California. No specific data are available for boats like
25 kayaks because these water craft are not registered and can be launched outside of
26 harbor areas. A 2002 study on the MBMNS by the U.S. Coast Guard found that
27 motorized propeller-driven recreational vessels generally are concentrated within 17.25
28 miles (15 nautical miles [nm]) of the MBNMS shore, sail-powered recreational vessels
29 are concentrated within 11.5 miles (10 nm) of shore, motorized personal water craft (Jet
30 Skis and the like) within 5.75 miles (5 nm) of shore, and hand-powered recreational
31 vessels (kayaks, canoes) within 1.15 miles (1 nm) of shore. These findings suggest that
32 all types of recreational vessels could occur within the proposed cable route
33 construction and operation areas.

Cargo Carriers

Large commercial vessels transiting between California ports generally remain about 5.75 miles (5 nm) off Point Sur when northbound and 11.5 miles (10 nm) when southbound. Figure 4.7-1 illustrates general vessel traffic patterns for cargo carriers and tankers along the central California coast. This informal practice would result in the transit of cargo carriers over the proposed cable route. Data for a 6-month period in 1994 revealed that 121 cargo carriers transited through the MBNMS (USCG 2002).

Tankers

As described in Section 4.7.2, tankers carrying crude oil generally keep a minimum of 57.5 miles (50 nm) from shore along the central coast (see Figure 4.7-1). Given this practice, oil tankers in transit are unlikely to cross the proposed cable route. However, some oil products are transported in and out of Moss Landing (USCG 2002), and these vessels could cross the proposed cable route.

4.7.2 Regulatory Setting

Federal

Federal regulations concerning marine navigation are codified in 33 CFR Parts 1 through 399 and are implemented by the U.S. Coast Guard and the U.S. Army Corps of Engineers. Federal regulations for marine vessel shipping are codified in 46 CFR Parts 1 through 599 and are implemented by the U.S. Coast Guard, Maritime Administration, and Federal Maritime Commission. California laws concerning marine navigation are codified in the Harbors and Navigation Code and are implemented by local city and county governments.

The Navigation Rules, enforced by the U.S. Coast Guard, establish actions to be taken by vessels to avoid collision. These rules were established through the International Navigational Rules Act of 1977 (Public Law 95-75, 91 Stat. 308, or 33 U.S.C. 1601-1608). A vessel engaged in laying an undersea cable is defined by the U.S. Coast Guard as a “vessel restricted in her ability to maneuver.” This definition refers to vessels that, due to the nature of their work, are unable to keep out of the way of other vessels. Thus, cable-laying vessels are granted special considerations. The Cable Act of 1992 (47 CFR §76) states that other vessels must maintain a 1.15 miles (1 nm) separation from a vessel laying or repairing an undersea cable. In addition, the Navigation Rules require vessels restricted in their ability to maneuver to display appropriate day shapes or lights.

- 1 Figure 4.7-1. Vessel Traffic Patterns along the Central California Coast
- 2 8½ " x 11"/B&W

The entire marine vessel study area is within the 11th Coast Guard District, which includes all of California and the offshore waters, as well as the states of Nevada, Arizona, and New Mexico. Each U.S. Coast Guard District publishes a weekly *Local Notice to Mariners* (LNM), which is the primary means for disseminating information pertaining to navigational safety and other items of interest to mariners. Information contained in the LNM includes reports of hazards to navigation, channel conditions, obstructions, dangers, anchorages, restricted areas, regattas, construction or modification of bridges, construction or removal of oil platforms, and laying of undersea cable. LNM's are developed from information received from Coast Guard field units, the general public, the Army Corps of Engineers, U.S. Merchant Fleet, National Oceanic and Atmospheric Administration, National Ocean Service, and other sources, concerning the establishment of, changes to, and deficiencies in aids to navigation and any other information pertaining to the safety of the waterways. These notices are published weekly. For cable laying operations such as the proposed Project, the U.S. Coast Guard would also likely issue a continuous "pon-pon" transmission over channel 16 during cable laying operations to alert other vessel operators in the area.

Designated coastwise shipping traffic lanes have been established along two portions of the California coast: (1) in the vicinity of the entrance to San Francisco Bay, and (2) from Point Conception southeast to the vicinity of the entrance to the ports of Los Angeles and Long Beach. The shipping lanes are generally 4.6 to 23 miles (4 to 20 nm) offshore. Where shipping lanes have not been established, such as in the Monterey Bay area, navigation practice has produced a pattern of traffic flow at various distances from shore based on transit direction, vessel type, and cargo. Members of the Western States Petroleum Association, whose tankers carry crude oil from Alaska, agreed in 1990 to voluntarily keep laden vessels a minimum of 57.5 miles (50 nm) from shore along the California central coast. Slower-going ocean tank barges currently transit the central coast approximately 17.25 to 28.75 miles (15 to 25 nm) from shore to minimize interaction with the oil tankers further out and the speedier container ships closer in. Given these practices, ocean tank barges could cross the western portion of the proposed cable route. Oil carrying tankers are unlikely to cross the cable route.

The proposed cable route lies entirely within the MBNMS. The MBNMS was designated in accordance with the National Marine Sanctuaries Act. Regulatory, enforcement, and other authority regarding national marine sanctuaries is specified in the act. The National Oceanic and Atmospheric Administration has been assigned responsibility for managing the national marine sanctuaries and has developed regulations uniquely suited to protect the resources at each sanctuary. The regulations governing

management of the MBNMS are provided in the U.S. Code of Federal Regulations, Title 15, Part 922.

Within the MBNMS, operation of motorized personal watercraft (Jet Skis and the like) is prohibited except within four designated zones and associated access routes. The zones where personal watercraft are allowed include approximately 6.9 square miles (6 square nm) off Moss Landing Harbor from the harbor launch ramps, through the harbor entrance, and along a 100-yard-wide access route due west. A small portion of the proposed cable route underlies an area where personal watercraft are allowed.

4.7.3 Significance Criteria

An impact on marine vessel traffic is considered significant if:

- Cable installation, operations, or removal activities were to result in military, commercial, or recreational marine traffic delays of over 1 hour, or increased risk to vessels involving accidents or collisions.

4.7.4 Impact Analysis and Mitigation

The proposed Project would have no significant impacts on marine vessel transportation; the only impacts described below for the Project would be adverse but not significant (Class III).

Construction would involve HDD from MBARI property to about 0.89 mile offshore. HDD equipment would be on land and the only offshore component of this part of construction would be a dive boat and divers to assist with drill exit and a temporary buoy to designate the offshore end of the pipeline. HDD is expected to take approximately 2 weeks. Concurrently, cable laying and node installation would take place. Cable laying and node installation would involve the presence in Monterey Bay of a cable laying vessel, the 469-foot *Ile de Ré*, as well as the ROV *Ventana*, and the *Ventana's* support ship, *Point Lobos*. These vessels would be present and operating during the 10 to 14 days in which the pre-lay grapnel run is performed and all cable laying completed.

Operations would involve the periodic installation of new equipment at the science node by an ROV and would involve the presence of an ROV and support vessel. Inspections and minor repairs would also be undertaken using an ROV. More major repairs could involve the removal and replacement of cable using a cable laying/repair vessel.

Should the cable become unburied, it is assumed it would continue to lay on the seafloor and not float freely or cause an obstruction to vessels transiting above.

However, cable unburial may have impacts on fishing vessel operations (see Section 4.2).

At the end of the 25-year Project life, the cable and node would be removed, using vessels similar to that used for cable laying.

The presence of vessels used during cable installation, operation, and decommissioning would not cause a delay to other vessels in Monterey Bay. While Project construction and decommissioning would involve the presence of a cable laying vessel, an ROV, ROV support vessel, and dive boat in the waters of Monterey Bay, these vessels would not block any vessel infrastructure or any designated channel and, therefore, would not create a delay for other vessels. Similarly, Project-related vessels used during Project operations, e.g., a cable repair vessel or ROV, such as installing new equipment, inspecting the cable, and repairing the cable are not anticipated to interfere with existing vessel infrastructure or cause delay to vessel traffic.

The Cable Act of 1992 (47 CFR §76) states that other vessels must maintain a 1.15-mile (1 nm) separation from a vessel laying or repairing an undersea cable. If the construction periods of the IODP Borehole Project and proposed Project were to overlap, it would bring other vessels within 1.15 miles (1 nm) of the cable laying vessel, conflicting with safety provisions stated in the Cable Act of 1992.

Impact MVT-1: Vessel Accidents in Monterey Bay during Cable Installation

Vessels used during cable installation could increase the potential for vessel accidents in Monterey Bay. (Class III)

The presence of vessels used during construction would not substantially increase the potential for vessel accidents in Monterey Bay. The Project would require the presence of four additional vessels in Monterey Bay during the approximately 2 weeks of construction. Given the open geometry of the Bay, the presence of four additional vessels more than 4,600 feet (1,402 m) offshore would not constrain any vessel movements nor require ships to pass within close proximity to each other. Also, the Cable Act of 1992 requires other vessels to maintain a 1-nm separation from a vessel laying or repairing an undersea cable. The cable laying vessel, *Ile de Ré*, while large, would operate at generally slow speeds and in a manner that would not endanger other ships. Information about the timing and location of cable lay operations in the LNM would also reduce the risk of collision.

1 **Impact MVT-2: Vessel Accidents in Monterey Bay during Project Operation**

2 **Vessels used during Project operation could increase the potential for vessel**
3 **accidents in Monterey Bay. (Class III)**

4 The presence of vessels used during operations would not substantially increase the
5 potential for vessel accidents in Monterey Bay. Project operations would periodically
6 require the presence of ROVs and the ROV support vessel. Equipment installed at the
7 science node would be placed on the seafloor and would not float freely so as to rise
8 through the water and pose a risk to vessel traffic. Some repairs during Project
9 operations may require the presence of a cable repair vessel. Given the open geometry
10 of the Bay and distance from shore, the presence of these additional vessels would not
11 constrain any vessel movements nor require ships to pass within close proximity to
12 each other. A cable repair vessel would operate at generally slow speeds and in a
13 manner that would not endanger other ships.

14 **Impact MVT-3: Vessel Accidents in Monterey Bay during Cable Removal**

15 **Vessels used during cable removal could increase the potential for vessel**
16 **accidents in Monterey Bay. (Class III)**

17 The presence of vessels used during cable removal activities at the end of the Project's
18 expected 25-year life would not substantially increase the potential for vessel accidents
19 in Monterey Bay. Cable removal would require the presence of a dynamically
20 positioned vessel in Monterey Bay to control cable excavation, sectioning, and retrieval
21 activities. It is anticipated that cable removal activities would occur for approximately 2
22 weeks. Given the open geometry of the Bay, the presence of an additional vessel more
23 than 4,600 feet (1,402 m) offshore would not constrain any vessel movements nor
24 require ships to pass within close proximity to each other. The cable retrieval vessel
25 would operate 24 hours a day and in a manner that would not endanger other ships.

Table 4.7-1. Summary of Marine Vessel Traffic Impacts and Mitigation Measures

Impact	Mitigation Measures
MVT-1. Vessels used during cable installation could increase the potential for vessel accidents in Monterey Bay. (Class III)	None required.
MVT-2. Vessels used during Project operation could increase the potential for vessel accidents in Monterey Bay. (Class III)	None required.
MVT-3. Vessels used during cable removal could increase the potential for vessel accidents in Monterey Bay. (Class III)	None required.

4.7.5 Cumulative Impacts

Of the six cumulative projects, two projects – the Coastal Water Project and the California State Parks Repair and Improvement Projects – are not expected to have offshore components nor would they affect marine vessel infrastructure; they would therefore not impact marine vessel transportation.

The North Harbor Redevelopment Project would involve harbor dredging, rip-rap installation, and construction of a four-lane concrete boat ramp. These construction activities have the potential to cause significant delay to vessels attempting to utilize the harbor. However, because the proposed Project would not affect this area (cable laying would begin at least 0.89 miles [1.43 km] from shore) and entail up to 10 to 14 days of vessel activities, construction of these projects would not have a cumulative impact on marine vessel transportation. While both projects may involve increased vessel traffic, these increases, in combination, are not anticipated to create significant vessel delay or increase the potential for vessel accidents.

Construction of the Moss Landing Marine Laboratory's Ocean Pier Replacement has the potential to create vessel delay and could increase potential for vessel conflicts. However, because the pier will be used only by research vessels and not the general public, the number of vessels subject to delay would be small. Because of the general open geometry of this area, it is anticipated that vessels could easily maneuver to avoid the construction area. Further, the proposed Project does not affect the area where pier construction would occur (cable laying would begin at least 0.89 mile from shore), so construction of these projects would not have a cumulative impact on marine vessel transportation. While both projects may involve increased vessel traffic, these increases are not anticipated to create significant vessel delay or increase potential for vessel accidents.

The IODP Borehole Project would involve construction in Monterey Bay within 0.9 mile from the proposed Project node, and construction could occur in the same timeframe as the proposed Project. The operations areas of the two projects would also overlap and would involve the presence of vessels in Monterey Bay.

The SF-12 Dredge Disposal Site Operations Project would result in permitted disposal activities approximately 860 feet (250 m) west-northwest of the end of the Moss Landing Marine Lab Pier. Dredged material would be released into the mouth of the canyon within an approximately 30,000 square feet (2,500 square meter) area. As disposal activities would likely occur in 2006 or 2007, permitted operations could occur in the same timeframe as the proposed Project. The release of dredged material within this zone at the mouth of the submarine canyon may involve increased vessel traffic.

Cumulative Impact MVT-4: Potential Increased Risk of Marine Vessel Conflict during Construction

The presence of vessels used during construction of the proposed Project and IODP Borehole Project would substantially increase the potential for vessel accidents in Monterey Bay. (Class II)

As discussed in Section 4.7.4, the Cable Act of 1992 (47 CFR §76) states that other vessels must maintain a 1.15 miles (1 nm) separation from a vessel laying or repairing an undersea cable. If the construction periods of the IODP Borehole Project and proposed Project were to overlap, it would bring other vessels within 1.15 miles (1 nm) of the cable laying vessel, conflicting with safety provisions stated in the Cable Act of 1992.

Mitigation Measure for Cumulative Impact **MVT-4**: Potential Increased Risk of Marine Vessel Conflict during Construction

MM MVT-4. Schedule proposed Project construction to avoid the presence of a cable lay vessel within 1.15 miles (1 nm) of vessels performing borehole construction.

Rationale for Mitigation

Mitigation Measure **MM MVT-4** would prevent conflicts between the various construction vessels of the two projects and would avoid Cumulative Impact **MVT-4**.

4.7.6 Alternative Landings

Alternative Landing Area 1: Duke Energy Pipeline to MBARI Property

Alternative Landing Area 1 would involve HDD from MBARI property across the inner channel of Moss Landing Harbor to Jetty Road at Moss Landing State Beach. HDD equipment would be on land and there would be no offshore component for this part of construction. HDD is expected to take approximately 2 weeks. Concurrently, cable laying and node installation would take place. Construction under Alternative Landing Area 1 would also involve laying cable from the outlet of an existing pipeline approximately 502 feet (153 m) offshore. Like the proposed Project, cable laying and node installation under Alternative Landing Area 1 would involve the presence, in Monterey Bay, of a cable laying vessel, the 469-foot *Ile de Ré*, as well as the ROV *Ventana*, and the *Ventana's* support ship, *Point Lobos*. These vessels would be present and operating during 10 to 14 days in which the pre-lay grapnel run is performed and all cable laying completed.

Operations would be the same as the proposed Project (Class III). Decommissioning would involve similar activities and equipment as construction.

Impact MVT-5: Potential Marine Vessel Traffic Delay during Construction and Decommissioning

The presence of vessels used during construction and decommissioning could block access to Moss Landing Harbor and cause substantial delays to other vessels. (Class I)

Construction and removal of the cable, under this alternative, would bring the large cable laying vessel near shore, blocking access to Moss Landing Harbor and the associated deep-draft mooring and fueling facility. Under this alternative the cable laying vessel would operate within 500 feet (152 m) from shore, under the proposed Project the *Ile, de Ré* would operate no closer than 4,700 feet (1,433 m) from shore. Access would be hindered during both the pre-lay grapnel run and during main cable lay operations. Delays of several hours are anticipated.

Mitigation Measure for Impact MVT-5: Potential Marine Vessel Traffic Delay during Construction and Decommissioning

MM MVT-5a. Provide notice to Moss Landing Harbormaster no less than 30 days before construction starts.

MM MVT-5b. Provide an advertisement in the published *Local Notice to Mariners* no less than 30 days before construction starts.

MM MVT-5c. Request issuance of a Broadcast Notice to Mariners no less than 48 hours in advance of construction,

Rationale for Mitigation

Mitigation Measures **MM MVT-5a** through **MM MVT-5c** would allow some users of Moss Landing Harbor to adjust schedules to avoid delays and loss of access caused by Alternative Landing Area 1 construction. However, some vessels could still experience delays of 1 hour or greater, so this remains a significant impact.

Impact MVT-6: Potential Increased Risk of Marine Vessel Conflict during Construction and Decommissioning

The presence of vessels used during construction and decommissioning would substantially increase the potential for vessel accidents in Monterey Bay. (Class II)

Construction under Alternative Landing Area 1 would require the presence of the cable laying vessel within about 500 feet (152 m) of shore in the near vicinity of both Moss Landing Harbor and its associated deep-draft mooring and fueling facility. This is an area with heavy vessel traffic and a confined area, with only a limited area for maneuvering. These conditions, combined with the presence of construction vessels under Alternative Landing Area 1, significantly increase the potential for vessel accidents in Monterey Bay.

Mitigation Measure for Impact **MVT-6**: Potential Increased Risk of Marine Vessel Traffic Conflict during Construction and Decommissioning

Mitigation Measures **MM MVT-5a** through **MM MVT-5c** would apply to this impact, as would:

MM MVT-6a. Mark all temporary waterway obstructions with flashing yellow lights for the protection of navigation.

MM MVT-6b. Suspend work from waterborne equipment when visibility at the work site is less than 100 yards.

MM MVT-6c. Equip all vessels with radar reflectors.

Rationale for Mitigation

Mitigation Measures **MM MVT-5a** through **MM MVT-5c** and **MM MVT-6a** through **MM MVT-6c** would alert mariners to construction activities. These mitigation measures, combined with the requirement, per the Cable Act of 1992, to maintain a 1.15 miles (1 nm) separation from a vessel laying or repairing an undersea cable, would limit potential for vessel conflict during construction and decommissioning to a less than significant level.

Alternative Landing Area 2: Moss Landing Marine Laboratories (MLML) Pier

Construction under Alternative Landing Area 2 would involve laying cable near shore, from a pier to be constructed by MLML northward and across the head of Monterey Canyon near the entrance to Moss Landing Harbor. Like the proposed Project, cable laying and node installation under Alternative Landing Area 2 would involve the presence, in Monterey Bay, of a cable laying vessel, the 469 foot *Ile de Ré*, as well as the ROV *Ventana*, and the *Ventana's* support ship, *Point Lobos*. These vessels would be present and operating during 10 to 14 days in which the pre-lay grapnel run is performed and all cable laying completed.

Operations would be the same as the proposed Project (Class III). Decommissioning would involve similar activities and equipment as construction.

Construction and removal of the cable, under this alternative, would bring the large cable laying vessel near shore, blocking access to Moss Landing Harbor and associated deep-draft mooring and fueling facility. Access would be blocked during both the pre-lay grapnel run and during main cable lay operations. Delays of several hours are anticipated. Implementation of Mitigation Measures **MM MVT-5a** through **MM MVT-5c** would be required; however, some vessels could still experience delays of 1 hour or greater, so this impact remains significant (Class I).

Like Alternative Landing Area 1, construction under Alternative Landing Area 2 would require the presence of the cable laying vessel near shore in the near vicinity of both Moss Landing Harbor and its associated deep-draft mooring and fueling facility. This is an area with heavy vessel traffic and a confined area, with only a limited area for maneuvering. These conditions, combined with the presence of construction vessels under Alternative Landing Area 2, significantly increase the potential for vessel accidents in Monterey Bay. Mitigation Measures **MM MVT-5a** through **MM MVT-5c** and **MM MVT-6a** through **MM MVT-6c** would alert mariners to construction activities. These mitigation measures, combined with the requirement, per the Cable Act of 1992, to maintain a 1.15 miles (1 nm) separation from a vessel laying or repairing an undersea

1 cable, would limit the potential for vessel conflict during construction and
2 decommissioning to a less than significant level (Class II).

3 **No Project/Action Alternative**

4 Under the No Project/No Action alternative, the proposed cable would not be installed
5 so there would be no Project-related change in vessel traffic above that associated with
6 existing operations.